

2006 CAFR

Infrastructure Reporting Information

Summary of Changes since 2005 reporting to the Office of Financial Management:

- The end of fiscal year 2006 infrastructure asset balance is \$14.3 billion, an increase of more than \$1 billion from last year.
- Reported lane miles increased by 96.
- Six bridges were added. This is a net increase.
- Condition information for rest areas has been added.

MANAGEMENT'S DISCUSSION AND ANALYSIS

The State of Washington first reported infrastructure under the requirements of the Governmental Accounting Standards Board in fiscal year 2002. Transportation infrastructure reported includes the State Highway System, Emergency Airfields and a short rail line. While the rail line is reported net of depreciation, the State Highway System and Emergency Airfields are reported using the Modified Approach. Under the Modified Approach, rather than recording depreciation, asset condition is reported. The condition of these assets, along with their rating scales for pavements, bridges, rest areas and air fields are further explained in the notes and required supplementary information to the financial statements.

The Department of Transportation accomplished a net addition of 96 lane miles and 6 bridges in fiscal year 2006. The State Highway System asset value increased by \$1,029 million during the fiscal year. The State Highway System and Emergency Airfields continue to meet established condition levels. No significant changes in condition levels were noted for pavements or bridges. Amounts spent during fiscal year 2006 to maintain/preserve these infrastructure assets were not significantly different from estimated spending plans according to the biennial budget.

Fiscal year 2007 commitments made for ongoing infrastructure projects that extend beyond fiscal year 2006 amount to \$1,392 million representing 766 projects.

Note 6: Capital Assets Footnote

The state first reported infrastructure under the new requirements of the Governmental Accounting Standards Board Statement Number 34 in Fiscal Year 2002. The state accounts for the State Highway System and Emergency Airfields using the modified approach and reports them as non-depreciable Highway System Infrastructure. The state's short rail line is depreciated and is reported as depreciable Infrastructure (other). Under the modified approach, rather than recording depreciation, asset condition is reported. The rating scales for pavements, bridges, rest areas and airfields are further explained in Required Supplementary Information.

General Ledger Account 2120 - Transportation Infrastructure

FY06 Beginning Balance	Additions	Deletions	FY06 Ending Balance
13,338,709,234.90	1,028,848,021.53	-	14,367,557,256.43

Required Supplementary Information

Pavement Condition

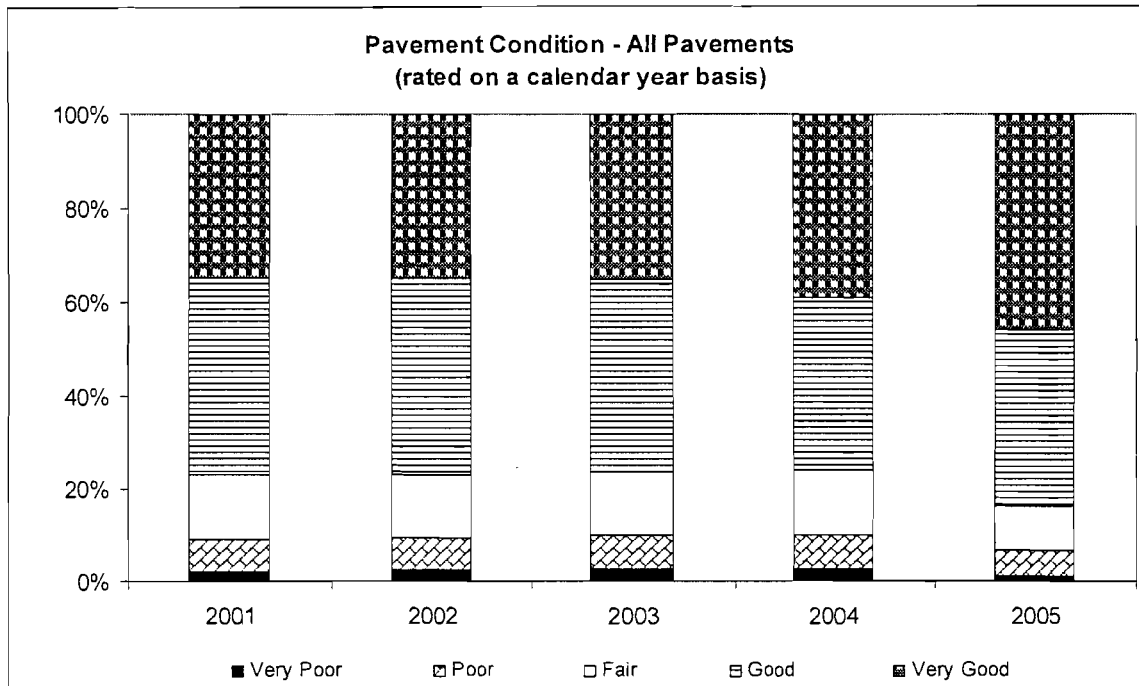
The Washington State Department of Transportation (WSDOT) owns and maintains 20,099 lane miles of highway, including ramps, collectors and special use lanes. Special use lanes include High Occupancy Vehicle (HOV), climbing, chain-up, holding, slow vehicle turnout, two-way turn, weaving/speed change, bicycle, transit, truck climbing shoulder, turn and acceleration lanes. Special use and ramp/collector lane miles make up 1,736 of the total lane miles.

WSDOT has been rating pavement condition since 1969. Pavement rated in *good* condition is smooth and has few defects. Pavement in *poor* condition is characterized by cracking, patching, roughness and rutting. Pavement condition is rated using three factors: Pavement Structural Condition (PSC), International Roughness Index (IRI), and Rutting.

In 1993 the Legislature required WSDOT to rehabilitate pavements at the Lowest Life Cycle Cost (LLCC), which has been determined to occur at a PSC range between 40 and 60, or when triggers for roughness or rutting are met. The trend over the last five years has shown that the percentage of pavements in poor or very poor condition has remained fairly stable at 9 to 10% with a slight improvement to 7% in 2005. WSDOT uses LLCC analysis to manage its pavement preservation program. The principles behind LLCC are basic – if rehabilitation is done too early, pavement life is wasted; if rehabilitation is done too late, very costly repair work may be required, especially if the underlying structure is compromised. WSDOT continually looks for ways to best strike the balance between these two basic principles.

While the goal for pavements is zero miles in ‘poor’ condition, marginally good pavements may deteriorate into poor condition during the lag time between assessment and actual rehabilitation. As a result, a small percentage of marginally good pavements will move into the ‘poor’ condition category for any given assessment period.

The Department of Transportation manages State Highways targeting the LLCC per the Pavement Management System due date. While the department has a long-term goal of no pavements in poor condition (a pavement condition index less than 40, on a 100 point scale), the current policy is to maintain 90 percent of all highway pavement types at a pavement condition index of 40 or better with no more than 10 percent of its highways at a pavement condition below 40. The most recent assessment found that State Highways were within the prescribed parameters with only seven percent of all pavement types with a pavement condition index below 40.



WSDOT uses the following scale for Pavement Structural Condition (PSC):

Category	PSC Range	Description
Very Good	80 – 100	Little or no distress. Example: Flexible pavement with 5% of wheel track length having “hairline” severity alligator cracking will have a PSC of 80.
Good	60 - 80	Early stage deterioration. Example: Flexible pavement with 15% of wheel track length having “hairline” alligator cracking will have a PSC of 70.
Fair	40 - 60	This is the threshold value for rehabilitation. Example: Flexible pavement with 25% of wheel track length having “hairline” alligator cracking will have a PSC of 50.
Poor	20 - 40	Structural deterioration. Example: Flexible pavement with 25% of wheel track length having “medium (spalled)” severity alligator cracking will have a PSC of 30.
Very Poor	0 - 20	Advanced structural deterioration. Example: Flexible pavement with 40% of wheel track length having “medium (spalled)” severity alligator cracking will have a PSC of 10. May require extensive repair and thicker overlays.

The PSC is a measure based on distresses such as cracking and patching which are related to the pavement's ability to carry loads. Pavements develop structural deficiencies due to truck traffic and cold weather. WSDOT attempts to program rehabilitation for pavement segments when they are projected to reach a PSC of 50. A PSC of 50 can occur due to various amounts and severity of distress. For rigid pavements (such as Portland cement concrete), a PSC of 50 represents 50 percent of the concrete slabs exhibiting joint faulting with a severity of $\frac{1}{8}$ to $\frac{1}{4}$ inch (faulting is the elevation difference at slab joints and results in a rough ride – particularly in large trucks). Further, a PSC of 50 can also be obtained if 25 percent of concrete slabs exhibit two to three cracks per panel.

The International Roughness Index (IRI) uses a scale in inches per mile. WSDOT considers pavements with a ride performance measures greater than 220 inches per mile to be in poor condition. For example, new asphalt overlays typically have ride values below 75 inches per mile, which is very smooth.

Rutting is measured in millimeters: a pavement with more the 12 millimeters of rutting is considered in poor condition. The three indices (PSC, IRI, and Rutting) are combined to rate a section of pavement which is assigned the lowest category of any of the three ratings. The following table shows the combined explanatory categories and the ratings for each index.

Category	PSC	IRI	Rut
Very Good	100 – 80	< 95	< 4
Good	80 – 60	95 – 170	4 – 8
Fair	60 – 40	170 – 220	8 – 12
Poor	40 – 20	220 – 320	12 – 16
Very Poor	0 – 20	> 320	> 16

Since 1999, WSDOT has used an automated pavement distress survey procedure. In the automated survey, high-resolution video images are collected at highway speed and these video images are then rated on special workstations at 3-6 mph speed. This change has also resulted in a more detailed classification and recording of various distresses that are rated.

Pavement condition surveys are generally conducted in the fall of each year and analyzed during the winter and spring, with the previous year's results available in July each year. In 2005, WSDOT rated pavement condition on 17,779 of the 20,099 lane miles of highway. The chart on the following page shows recent pavement condition ratings for the State Highway System, using the combination of the three indices described above.

More information about pavement management at the Department of Transportation may be obtained at: <http://www.wsdot.wa.gov/biz/mats/pavement/>

Condition Rating of Washington State Department of Transportation's Pavement
Percentage of Pavement in Good or Better Condition

Percentage of Pavement in Fair or Better Condition

	<u>2005*</u>	<u>2004*</u>	<u>2003*</u>	<u>2002*</u>	<u>2001*</u>
Statewide - Chip Seals	91	86	86	89	89
Statewide - Asphalt	95	92	91	91	92
Statewide - Concrete	91	85	93	92	92
Statewide - All Pavements	93	90	90	91	91

Percentage of Pavement in Poor or Very Poor Condition

	<u>2005*</u>	<u>2004*</u>	<u>2003*</u>	<u>2002*</u>	<u>2001*</u>
Statewide - Chip Seals	9	14	14	11	11
Statewide - Asphalt	5	8	9	9	8
Statewide - Concrete	9	15	7	8	8
Statewide - All Pavements	7	10	10	9	9

* Calendar year data. Assessments are typically made in the summer and fall of each year, and processed during the winter and spring, with final results released in July. Years indicated are when the physical assessment was done in the summer and fall.

Note: The All Pavement percentages are calculated from total database averages, not a statistical average of the three pavement percentages. Numbers are rounded to full percentage points. IRI or rutting is not used for sections identified as under construction in rating district.

Bridge Condition

During fiscal year 2006 there were 3,088 state-owned vehicular structures over twenty feet in length with a total area of 43,933,923 square feet. In addition to bridges, the 3,088 structures include 84 culverts and 31 ferry terminal structures. All bridges are inspected on a two to four year interval, with no more than 10 percent of the bridges inspected less than every three years. Divers inspect underwater bridge components at least once every five years in accordance with Federal Highway Administration requirements. Special emphasis is given to the ongoing inspection and maintenance of major bridges representing a significant public investment due to size, complexity or strategic location. Information related to public bridges is maintained in the Washington State Bridge Inventory System (WSBIS). This system is used to develop preservation strategies and comprehensive recommendations for maintenance and construction, and for reporting to the Federal Highway Administration (FHWA).

WSDOT's policy is to maintain 95 percent of its bridges at a structural condition of at least fair, meaning that all primary structural elements are sound. The most recent assessment found that state-owned bridges were within the prescribed parameters with 97.5 percent having a condition rating of fair or better and only 2.5 percent of bridges having a condition rating of poor. Bridges rated as poor may have structural deficiencies that restrict the weight and type of traffic allowed. No bridges that are currently rated as poor are unsafe for public travel. Any bridges determined to be unsafe are closed to traffic. WSDOT had no closed bridges at June 30, 2006.

WSDOT's Bridge Seismic Retrofit Program prioritizes state bridges for seismic retrofit, and performs these retrofits as funding permits. Retrofit priorities are based on seismic risk of a site, structural detail deficiencies, and route importance. The Seismic Retrofit Program includes 920 bridges that have been classified as needing retrofitting. From 1991 to the end of June 2005, WSDOT has fully or partially retrofitted 358 bridges. Of those, 195 are completely retrofitted, 163 are partially retrofitted. There are also 15 bridges under contract to be retrofitted.

The following condition rating data is based on the structural sufficiency standards established in the FHWA "Recording and Coding Guide for the Structural Inventory and Appraisal of the Nation's Bridges." This structural rating relates to the evaluation of bridge superstructure, deck, substructure, structural adequacy and waterway adequacy. Three categories of condition were established in relation to the FHWA criteria as follows:

Category	National Bridge Inventory Code	Description
Good	6, 7, or 8	A range from no problems noted to some minor deterioration of structural elements.
Fair	5	All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling or scour.
Poor	4 or less	Advanced deficiencies such as section loss, deterioration, cracking, spalling, scour or seriously affected primary structural components.

Note: Bridges rated in poor condition may be restricted for the weight and type of traffic allowed.

Additional information regarding the Department of Transportation's bridge inspection program may be obtained at:

<http://www.wsdot.wa.gov/eesc/bridge/index.cfm>

Condition Rating of Washington State Department of Transportation's Bridges

Percentage of Bridges in Fair or Better Condition

		<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>
Bridge Type						
Reinforced Concrete	(1,298 bridges in FY 2006)	98.6	98.6	98	98	97
Prestressed Concrete	(1,299 bridges in FY2006)	99.4	99.5	99.5	99.5	99.5
Steel	(351 bridges* in FY 2006)	94.1	94.3	93	93	92
Timber	(62 bridges in FY 2006)	68.1	69.2	70	69	70
Statewide - All Bridges (3,010 out of 3,088 bridges in FY 2006)		97.5	97.6	97.4	97	96.7

Percentage of Bridges in Poor Condition

		<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>
Bridge Type						
Reinforced Concrete	(18 bridges in FY 2006)	1.4	1.4	2	2	3
Prestressed Concrete	(9 bridges in FY 2006)	0.7	0.5	0.5	0.5	0.5
Steel	(22 bridges* in FY 2006)	5.9	5.7	6.5	7	8
Timber	(29 bridges in FY 2006)	31.9	30.8	30	31	30
Statewide - All Bridges (78 out of 3,088 bridges in FY 2006)		2.5	2.4	2.6	3	3.3

Note: Bridges rated as poor may have structural deficiencies that restricted the weight and type of traffic allowed. WSDOT currently has 13 posted bridges and 141 restricted bridges. Posted bridges have signs posted which inform of legal weight limits. Restricted bridges are those where overweight permits will not be issued for travel by overweight vehicles. See <http://www.wsdot.wa.gov/freight/mcs/> for more information. Any bridges determined to be unsafe are closed to traffic. WSDOT had no closed bridges as of June 30, 2006.

* The steel bridge ratings for FY 2006 include 28 Ferry terminal structures rated as fair or better and 3 Ferry terminal structures rated as poor. While the terminals are included in a depreciable asset category, they are included here with bridge condition information since they are evaluated by the WSDOT Bridge Office on a periodic basis.

Emergency Airfield Condition

The Washington State Department of Transportation (WSDOT), through its Aviation Division is authorized by RCW 47.68.100 to acquire and maintain airports. Under this authority, WSDOT owns eight emergency airfields and leases several others. Most of the airfields are located near or adjacent to state highways and range in character from paved to gravel or turf. The primary purpose for the airports is to provide emergency facilities in remote locations. They serve as landing sites for medical evacuations, forest firefighting operations, and search and rescue. In addition, they allow access to local communities and recreation areas. Two airfields are in operational condition twelve months of the year, with five operational from June to October each year. One is only available for emergency search and rescue use. In accordance with WSDOT policy, maintenance is done on each airfield annually to keep it at its existing condition of use. Each airfield is inspected a minimum of three times per year.

The definitions below form the rating criteria for the current airfield condition ratings that follow.

Category Definition

- General Use Community Airport - An airport with a paved runway capable of handling aircraft with a maximum gross certificated takeoff weight of 12,500 pounds.
- Limited Use Community Airport - An airport with an unpaved runway capable of handling aircraft with a maximum gross certificated takeoff weight of 12,500 pounds.
- General Recreational Use Airport - An airport with a turf (unpaved) runway near access to recreational opportunities with capacity for aircraft less than 12,500 pounds.
- Limited Search and Rescue Forward Operating Location - An airport with a landing pad only capable of accommodating rotorcraft.

Note: One airport is open only as a limited search and rescue operating location and is expected to remain in that status.

For pictures of specific airfields, see our website at: <http://www.wsdot.wa.gov/Aviation/airports/>

Condition Rating of Washington State Emergency Airfields

	<u>Number of Airports</u>					
Owned airports:						
Acceptable for general use as a community airport	1					
Acceptable for limited use as a community airport	1					
Acceptable for general recreational use	5					
Limited search & rescue forward operating location	1					
Total Owned Airports	8					
		<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>
Percentage of airports acceptable for general recreational use or better		88	88	88	88	88
Percentage of airports not acceptable for general recreational use or better		12	12	12	12	12
Note: One airport is open only as a limited search & rescue operating location and is expected to remain in that status.						

Safety Rest Area Condition

The Washington State Department of Transportation (WSDOT) owns, operates, and maintains 42 developed safety rest area (SRA) facilities. Within these facilities, the department manages the following assets: 83 buildings, 566 acres, 29 on-site public drinking water systems, 36 on-site sewage pre-treatment/treatment systems, and 19 recreational vehicle sanitary disposal facilities.

In 2005 WSDOT performed the second round of Safety Rest Area building and site condition assessments to determine the facility deficiencies. This biennial process, which began in 2003, helps prioritize renovation and replacement projects. Sites and buildings are divided into functional components that are assessed with a numerical rating of 1 to 5 based on guideline criteria (1 meets current standards, 5 is poor). In addition, a weighting multiplier is applied based on the criticality of the individual component. For instance, a safety deficiency adds a weighting multiplier of 10 while a department image deficiency has a weighting multiplier of two. The combined total building and site ratings are used to determine each facility's overall condition, and fall into one of five categories.

WSDOT Safety Rest Area Condition Assessment rating parameters are not based on other state or national guidelines for safety rest areas. The model used is based on the Capital Facility program software already in use, with minor modifications to the rating parameters to better match the unique needs of Safety Rest Area facilities.

The Safety Rest Area Program goal is to have no more than 5% of the facilities rated Poor.

Category	Definition	Number of Safety Rest Areas in Category
Good Condition	Facility is new construction and/or meets current standards	11
Fair-High Condition	Facility meets current standards and/or is in adequate condition with minimal component deficiencies.	2
Fair-Mid Condition	Facility is functional, and in adequate condition with minor component deficiencies.	9
Fair-Low Condition	Facility has multiple system deficiencies.	18
Poor	Facility is at or beyond its service life, with multiple major deficiencies.	2
		42 total

	<u>2003</u>	<u>2005</u>
Percentage of facilities in Fair or Good condition	95	95
Percentage of facilities in Poor condition	5	5

Comparison of Budgeted-to-Actual Preservation and Maintenance

For the Fiscal Year Ended June 30, 2006
(expressed in thousands)

	FY 2002		FY 2003		FY 2004		FY 2005		FY 2006	
Pavements										
	Preservation	Maintenance	Preservation	Maintenance	Preservation	Maintenance	Preservation	Maintenance	Preservation	Maintenance
Budget	134,810	23,746	119,160	22,796	116,902	21,254	118,055	20,657	108,409	19,219
Actual	127,946	19,485	123,883	24,123	107,229	18,064	122,868	18,715	130,340	18,586
Variance	6,864	4,261	(4,723)	(1,327)	9,673	3,190	(4,813)	1,942	(21,931)	633
Bridges										
	Preservation	Maintenance	Preservation	Maintenance	Preservation	Maintenance	Preservation	Maintenance	Preservation	Maintenance
Budget	24,270	11,430	22,460	11,222	30,637	11,292	16,768	11,159	52,507	11,552
Actual	16,307	11,012	23,988	12,853	24,780	11,267	14,332	11,151	20,338	11,820
Variance	7,963	418	(1,528)	(1,631)	5,857	25	2,436	8	32,169	(268)
Emergency Air Fields										
	Preservation & Maintenance		Preservation & Maintenance		Preservation & Maintenance		Preservation & Maintenance		Preservation & Maintenance	
Budget	70		70		70		108		83	
Actual	64		58		71		129		67	
Variance	6		12		(1)		(21)		16	
Rest Areas										
	Preservation	Maintenance	Preservation	Maintenance	Preservation	Maintenance	Preservation	Maintenance	Preservation	Maintenance
Budget	155	4,744	390	4,744	331	4,268	381	4,268	188	5,021
Actual	112	4,462	386	4,688	222	4,833	333	5,527	129	5,187
Variance	43	282	4	56	109	(509)	48	(1,259)	59	(166)

In addition to increasing and improving the state highway system, WSDOT places a high priority on preserving and maintaining the current highway system. WSDOT breaks out preservation and maintenance into two separate functions. Preservation can be described as projects that maintain the structural integrity of the existing highway system including roadway pavements, safety features, bridges, and other structures/facilities. The Maintenance function handles the day to day needs that occur such as guardrail replacement, patching pot holes, installing signs, and vegetation control, etc.

In 1996 WSDOT embarked on an initiative to use outcome based performance measures for evaluating the effectiveness of the Maintenance Program. The Maintenance Accountability Process (MAP) is a comprehensive planning, measuring and managing process that provides a means for communicating the impacts of policy and budget decisions on program service delivery. WSDOT uses it to identify investment choices and effects of those choices in communicating with the legislature and other stakeholders. The MAP measures and communicates the outcomes of 34 distinct highway maintenance activities. Maintenance results are measured via field condition surveys and reported as Level of Service (LOS) ratings, which range from A to F. LOS targets are defined in terms of the condition of various highway features (i.e. percent of guardrail on the highway system that is damaged) and are set commensurate with the level of funding provided for the WSDOT highway maintenance program. More information about MAP may be obtained at: <http://www.wsdot.wa.gov/maintenance/accountability.htm>

Notes: Numbers for the Pavements and Bridges budget amounts are calculated based on biennial plans as shown in the WSDOT *Monthly Financial Report* for subprograms P1 (Roadway Preservation), P2 (Structures Preservation), and M2 (Roadway, Bridge & Tunnel Maintenance). For FY2006, the annual budget was calculated as half the biennial amount. The Preservation budgeted and actual amounts were adjusted for capitalized infrastructure and equipment in FY2006.

The emergency airfields (program F3, State Airport Construction and Maintenance) budget amount came from the same sources as for pavements and bridges described above but is only one fourth of the biennium total because the budget is split evenly between state owned and leased airports.

The rest areas maintenance budget is based on the biennial plan as shown in the WSDOT *Monthly Financial Report* for subprogram M2 under maintenance group "Rest Area Maintenance". For FY2006, the annual budget was calculated as half the biennial amount. The rest area preservation budget is part of the P3 subprogram and consists of programmed rest area preservation projects of a non-capitalized nature. For fiscal years 2002 through 2005 the budget amounts are based on biennial plans as shown in the WSDOT *Monthly Financial Report* for subprogram P3 (Other Preservation), the annual budgets were calculated as half of the biennial amount times the percentage of non-capitalized rest area costs to the total costs in subprogram P3. Fiscal Year 2006's budget amount was provided by the rest area program manager.

The state implemented the requirements of Statement No. 34 of the Governmental Accounting Standards Board (GASB), including the provisions related to capitalizing and reporting infrastructure on the modified approach, in Fiscal Year 2002. While budget to actual information is not available for years prior to Fiscal Year 2002 using the GASB definitions of preservation and maintenance, historical budget to actual information for the entire Construction and Maintenance programs is available by contacting the WSDOT Budget Office at (360) 705-7500.